

CLAIMS

1. A hearing aid comprising
a transceiver for interconnection of the hearing aid with a wireless network, and
a communication controller that is adapted for controlling data exchange through the
5 network in accordance with a network protocol, and wherein
the controller is further adapted for initialisation of the network
in an acquisition mode by
controlling the transceiver to transmit interrogation data repetitively, and
upon receipt of an interrogation data received message from another
10 device,
in a connected mode
acting as a master of the network by repetitively transmitting
synchronization data at intervals that are longer than the intervals
between transmitted interrogation data in the acquisition mode.
- 15 2. A hearing aid according to claim 1, wherein the controller is further adapted to act as
a slave in the network upon receipt of interrogation data from another hearing aid, the
other hearing aid being the master of the network.
3. A hearing aid according to claim 1 or 2, wherein the controller, in the acquisition
mode, is further adapted to enable the receiver to receive data from the network in
20 certain time periods during which transmission of synchronization data is inhibited.
4. A hearing aid according to any of the preceding claims, wherein the controller is
further adapted for selective operation of the transceiver in a plurality of frequency
channels.
5. A hearing aid according to any of the preceding claims, wherein the controller is
25 further adapted for operation of the transceiver according to a time division multiplex
scheme.
6. A hearing aid according to claim 4, wherein the controller is further adapted for
operation of the transceiver according to a frequency division multiplex scheme.
7. A hearing aid according to any of claims 4-6, wherein the controller is further
30 adapted for operation of the transceiver according to a spread spectrum scheme.

8. A hearing aid according to claim 7, wherein the controller is further adapted for operation of the transceiver according to a frequency hopping scheme.

9. A hearing aid according to claim 8, wherein a frequency hopping algorithm is provided that allows devices in the network to calculate what frequency channel the network will use at any given point in time without relying on the history of the network.

10. A hearing aid according to any of the preceding claims, wherein one device in the network is a master device, and all other devices in the network synchronize to the timing of the master device utilising the synchronization data.

11. A hearing aid according to any of the preceding claims, wherein a new device is automatically recognized by the network and interconnected with the network.

12. A hearing aid according to any of the preceding claims, wherein the controller is further adapted for reception of data from devices that do not receive data from the network.

13. A binaural hearing aid system comprising a first and a second hearing aid according to any of the preceding claims mutually interconnected for data exchange through the network.

14. A remote controller for a hearing aid and adapted to communicate with a hearing aid according to any of claims 1-12 through the wireless network.

15. A fitting instrument for a hearing aid and adapted to communicate with a hearing aid according to any of claims 1-12 through the wireless network.

16. A mobile phone adapted to communicate with a hearing aid according to any of claims 1-12 through the wireless network.

17. A broadcast system adapted to communicate with a hearing aid according to any of claims 1-12 through the wireless network.

18. A binaural hearing aid system comprising a first and a second hearing aid that are interconnected for data exchange,

wherein the first and second hearing aid are interconnected through a wireless network.

19. A binaural hearing aid system according to claim 18, wherein at least one of the first and second hearing aids further comprises

a transceiver for interconnection of the hearing aid with a wireless network, and

a communication controller that is adapted for controlling data exchange through the network in accordance with a network protocol, and wherein

the controller is further adapted for initialisation of the network

in an acquisition mode by

- 5 controlling the transceiver to transmit interrogation data repetitively, and
 upon receipt of an interrogation data received message from another
 device,

in a connected mode

- 10 acting as a master of the network by repetitively transmitting
 synchronization data at intervals that are longer than the intervals
 between transmitted interrogation data in the acquisition mode.

20. A binaural hearing aid system according to claim 19, wherein the controller is further adapted to act as a slave in the network upon receipt of interrogation data from another hearing aid, the other hearing aid being the master of the network.

- 15 21. A binaural hearing aid system according to claim 19 or 20, wherein the controller, in the acquisition mode, is further adapted to enable the receiver to receive data from the network in certain time periods during which transmission of synchronization data is inhibited.

- 20 22. A binaural hearing aid system according to any of claims 19-21, wherein the controller is further adapted for selective operation of the transceiver in a plurality of frequency channels.

23. A binaural hearing aid system according to any of claims 19-22, wherein the controller is further adapted for operation of the transceiver according to a time division multiplex scheme.

- 25 24. A binaural hearing aid system according to claim 22, wherein the controller is further adapted for operation of the transceiver according to a frequency division multiplex scheme.

- 30 25. A binaural hearing aid system according to any of claims 22-24, wherein the controller is further adapted for operation of the transceiver according to a spread spectrum scheme.

26. A binaural hearing aid system according to claim 25, wherein the controller is further adapted for operation of the transceiver according to a frequency hopping scheme.
27. A binaural hearing aid system according to claim 26, wherein a frequency hopping
5 algorithm is provided that allows devices in the network to calculate what frequency channel the network will use at any given point in time without relying on the history of the network.
28. A binaural hearing aid system according to any of claims 18-27, wherein one device in the network is a master device, and all other devices in the network
10 synchronize to the timing of the master device utilising the synchronization data.
29. A binaural hearing aid system according to any of claims 18-28, wherein a new device is automatically recognized by the network and interconnected with the network.
30. A binaural hearing aid system according to any of claims 18-29, wherein the controller is further adapted for reception of data from devices that do not receive data
15 from the network.
31. A remote controller for a binaural hearing aid system and adapted to communicate with a binaural hearing aid system according to any of claims 18-30 through the wireless network.
32. A fitting instrument for a binaural hearing aid system and adapted to communicate
20 with a binaural hearing aid system according to any of claims 18-30 through the wireless network.
33. A mobile phone adapted to communicate with a binaural hearing aid system according to any of claims 18-30 through the wireless network.
34. A broadcast system adapted to communicate with a binaural hearing aid system
25 according to any of claims 18-30 through the wireless network.